As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 1-24 recite leveling a surface of a semiconductor film by heating after removing an oxide film. For the reasons provided below, Morosawa does not teach or suggest the above-referenced features of the present invention.

The Official Action asserts that Morosawa discloses "leveling the surface of the semiconductor film by heating in a nitrogen atmosphere with a concentration less than 10 ppm oxygen" (page 3, Paper No. 0905). Although the Official Action still has not demonstrated what portion of Morosawa allegedly corresponds with the above-referenced feature, it appears that the Official Action is asserting that Morosawa's treatment with NH_3 and N_2 plasma at 250°C in order "to reduce dangling bonds" of a poly-silicon thin film 6 (paragraph [0011]) corresponds to the leveling step of the present

application. The Applicants respectfully disagree and traverse the above-referenced assertions in the Official Action. The Applicants respectfully submit that the step of decreasing dangling bonds of a semiconductor film in Morosawa does not technically correspond to a step of leveling a surface of a semiconductor film, as claimed in the present application. In other words, decreasing dangling bonds is not leveling. Therefore, Morosawa does not teach or suggest all the features of the independent claims of the present application.

Also, the claims recite a leveling step after removal of an oxide film (claims 1-6 and 13-24), a leveling step after treatment with hydrofluoric acid (claims 7-12), and a step of forming a gate insulating film after the leveling step. However, Morosawa performs a step for forming a gate insulating film and a step for decreasing dangling bonds simultaneously (paragraph [0011]). Morosawa does not teach or suggest that these steps be performed at different times. Therefore, Morosawa does not teach or suggest a leveling step after removal of an oxide film or after treatment with hydrofluoric acid, and a step of forming a gate insulating film after the leveling step.

Further, the present inventors have found distinct advantages in the claimed method. Specifically, the present inventors have found that forming a gate insulating film after the leveling step is effective in an interface between a semiconductor film and a gate insulating film. Leveling a surface of the semiconductor film effectively serves to decrease levels in an interface between the semiconductor film and the gate insulating film formed later. Morosawa does not teach or suggest either the claimed features or the effects and advantages discussed above.

Since Morosawa does not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

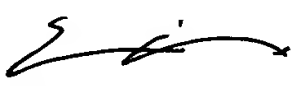
The Official Action rejects claims 19-24 and 51-56 as obvious based on the combination of Morosawa and U.S. Patent No. 5,712,191 to Nakajima et al.

Please incorporate the arguments above with respect to the deficiencies in Morosawa. Nakajima does not cure the deficiencies in Morosawa. The Official Action relies on Nakajima to allegedly teach "a laser light having a line shaped cross section elongated in one direction" (page 4, Paper No. 0905). However, Morosawa and Nakajima, either alone or in combination, do not disclose or suggest that decreasing dangling bonds is the same as leveling; performing a leveling step after removal of an oxide film or after treatment with hydrofluoric acid, and a step of forming a gate insulating film after the leveling step; or the effects and advantages of such steps.

Since Morosawa and Nakajima do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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